

Water and Culture

by **Sasha Bennett**, Bongo-Soe, Ghana

The communities in my region of Ghana, the Upper Eastern region, are very much dependent on water. Farmers sow crops during the rainy season and then harvest the crops when the rainy season ends.

In Bongo-Soe, where I am serving as a Peace Corps Volunteer, there is only one rainy season. When the rains come late or if there is a drought, ceremonies are performed. For example, farmers pray to the traditional gods in what is called a *Tinkana*. A *Tinkana* is a grove of trees that people don't cut down, because it is believed to house spirits and traditional gods. There, people (mostly farmers) pray and sacrifice animals to the gods. Sometimes farmers go to the oldest man in the village to consult gods to bring the rain. This village elder is not a witch doctor or juju man; he is consulted because of his age and wisdom. When the rains come, and when the people are at last able to harvest, they use their produce to buy animals such as goats, fowl or sheep to give to the elder as a sacrifice to the gods.

by **Molly Campbell**, Amisano, Ghana

While I was still in Peace Corps training, my host family took me to another home to witness a special ceremony. I had no idea where I was going. Every time I asked, I received an unclear response. Upon arriving, I saw a group of people in their best African dress. I was informed that it was a "baby-naming" ceremony. When the baby was brought out, the head of the family took the child and then proceeded to do a type of baptism. First he used water, dipping his finger into the water and dripping the water into the baby's mouth, saying things in the local language. He then performed the same ritual with palm wine and again with another type of alcohol. Family and friends come to pay homage and respect to the parents of the child, helping the child embark on his life adventure.

by **Amy Wiedemann**, Gbefi, Volta Region, Ghana

Water, whether the rivers and streams or the rainfall, is definitely deemed to come from "above." These days, with the spread of Christianity, God receives the credit. However, "in our fathers' day," meaning days past, various gods were seen as rivers and as the cause of water. The River Dayi, the principal river that passes along my village, was a fetish river. To this day, the people clearly respect it and its force.

Water also played a vital role in the history of the Ewe people, which is the tribal identity of my village and the surrounding area. A long time ago, all the Ewe forefathers were held captive by an evil king, Togbe Agokoli, in the town of Notse in present-day Togo. The evil king imprisoned everyone by surrounding their community with a high, strong wall, and positioning sentries all along the fortress so there was no escape. The Ewe leaders eventually devised a plan and from that day forward, every drop of water was to be thrown out against a designated part of the wall. They made a diversion at the other end of the fortress, and thus were able to flee through the hole worn by the water. They went on to found the villages that one sees today.

by **Steve Tester**, Odumase Krobo, Ghana

When you come to a Ghanaian's home, the first thing you are offered is a glass of water. This is a sign of welcome. During festivals, libations are poured. Water was at one time a libation; now it is common to see gin poured to please the gods.

"Mami" is an excellent example of a local goddess still alive in the folk tales near the coast. She is the goddess of saltwater and brings in that which is outside.

On Lake Volta at night, one should hope not to see cometlike spirits flying along the lake or river, because they bring bad luck. The spirits with red "O" shaped mouths are said to be witches that kill those whom they see.

by **Chris Botzman**, Akome, Volta Region, Ghana

When a baby is born, an elder gives him or her a drop of water and says, "This is water." Then the elder gives the baby a drop of wine and says, "This is wine. When you mean water, say water, and when you mean wine, say wine."

by **Michael Nelson**, Gbani, Northern Region, Ghana

In Japan and China it is tea. In the United States it may be coffee in the morning, or a soft drink later in the day. In southern Ghana it is *akpateshie* (distilled palm wine). In northern Ghana, it is—quite simply—water.

Water is the drink, not of choice, but of necessity. And, knowing it is a necessity, people consider it an obligation on the part of the host to provide the guest with a calabash (a gourd bowl) filled with water. One is supposed to give the guest what one can afford and what is needed: These requirements can be met with a simple serving of water.

Water, however, can transcend this frequent human interaction. Sometimes it becomes an offering to the gods. Here in Gbani, sacrifices—of goats, sheep, chickens, guinea fowl—are still practiced. Sometimes they are associated with a Muslim holiday; sometimes they are associated with traditional animist practices. Always, water is present.

In a water-poor area such as Gbani, sometimes the sacrifices are for the water itself. I will never forget the day the chief made a sacrifice in his compound. Only the family members were present. Our crops were dying from a lack of rain. They needed water. He prayed over

the small ancestral mound, a tiny dome near the center of the compound yard. Then, using a calabash full of water, he consecrated that mound. A goat and the blood of a fowl followed soon after. Of course, I was skeptical, but I must admit, the next day it did rain. And for the rest of the season, we did not have to worry about water for our crops.



The Source of Our Water

by **Molly Campbell**, Amisano, Ghana

The rainy season here in the Central Region of Ghana is never the same from year to year. One year there may be an overabundance and the next year a drought. This crazy weather pattern makes it difficult for farmers, market ladies, and families. The worry of water is always on their minds.

There is a seminary about a quarter of a mile from the center of the village, which fortunately has a borehole that villagers are allowed to use. The water from this borehole is very clean and can be drunk without treatment. The village also has three wells where clean water can be drawn; however during the dry season the chances of these drying out are good. The river is near and is still the main source of water for bathing and washing, while the wells and borehole are used for cooking and drinking.

The village also has piped water; however, there is a charge to use it, so only a small number use the piped water. This is my main source of water. The water comes from Cape Coast, about 12 to 14 miles from Amisano; therefore it is not always reliable. Pipes break frequently and during the dry season, the water is turned off weekly to help conserve it. I have a barrel I keep full, but during water shortages, I obtain water from the borehole.

by **Nell Todd**, Mafi-Dove, Ghana

I fetch my water from one of the eight boreholes in my village. A borehole is similar to a well, except it is smaller in diameter and it is lined with a plastic pipe. At the level of the water table underground, the pipe has tiny holes or slits in it to allow the water to enter. The plastic pipe is surrounded by a sand and gravel mixture, which acts as a natural filter. A pump is attached to the plastic pipe. We draw the water by hand. Each of the eight boreholes has a distinctive taste, and most people have a preference as to which they like best. Some have a salty taste, others have a high iron level.

Fetching water is often done by women and small children. The boreholes are not only a source to get water, but social places as well. Often I'll see children playing games. There is a game similar to "rock, paper, scissors," but instead of using their hands, the girls jump up and down, moving their legs in different directions while clapping. I still haven't quite figured it out!

The water I use has some silt in it due to improper construction of the gravel filter. After it settles for some time it is clear. I put the borehole water through a filter provided by the Peace Corps to make it safe for drinking.

The other source of water is the river. Many people have stopped using it for drinking, but they still like to bathe and wash clothes with it because it lathers well! ("Sister Ana, we use too much soap if we use the borehole water.")

by **Amy Wiedemann**, Gbafi, Volta Region, Ghana

In my community there are three sources of water. First, there is the River Dayi and some other smaller streams and tributaries. The community also has two boreholes that are, in effect, covered hand-dug wells, with manual pumps at the top. And then there is the water from above: rainwater. In my community, the availability of water is not a problem, thanks to the tremendous amount of rainfall that we receive. Not only do people collect this rainwater at their homes with gutters that lead to storage drums, but the rain also keeps the River Dayi at a higher level and constant flow. Despite being very hard, the bore hole water is definitely the cleanest and ready for immediate consumption. The rainwater in and of itself is good, however its contact with dusty, metal roofs and dirty gutters generally leaves the first bucket collected quite dirty. The River Dayi remains the number one water source for the people of Gbafi, despite its volume of sediment and dirt. As to the reasons for its top billing, it's the most consistent and has been there the longest, whereas the boreholes are about 15 years old. Also, there are only two boreholes for a community of around 3,000 people, which leads to a great demand and long lines. There are never any lines at the river.

by **Steve Tester**, Odumase Krobo, Ghana

My site is supplied with treated water from the KPONG water-treatment facility. It is piped from there to a reservoir. From the reservoir it is piped to my school's water tower, where it feeds the pipes all down Adoja hill (my site). Hopefully the water comes once a week. Sometimes water is scarce and, of course, there are no boreholes on mountains.

Peace Corps Volunteer Jason Felts lives 15 minutes away from Somanya. He receives the same water that I do; however, the water pipe in Agama Kope, where he lives, is used by two other villages (Ada Kope and Adelelope), providing water to some 150 to 160 people.

Peace Corps Volunteer Vikki Sturdivant lives 30 to 40 minutes away from Somanya. She came to her site to work on water and sanitation. She used water from the Volta Lake (directly), which contains Shigella, schistosomiasis, as well as a host of other diseases, and described the flavor as "rancid" (even after filtering and boiling). She now has a borehole 150 meters deep, provided by a nongovernmental organization in December 1997. It supplies approximately a thousand people. She said it's high in iron but it's palatable

by **Chris Botzman**, Akome, Volta Region, Ghana

The water I drink comes from a borehole. Water from a borehole is safe to drink without having to boil it. I use a filter, provided by the Peace Corps, which removes any large

particles from the water. The filter should be cleaned every week; thus, even though the water is classified as clean enough to drink, the filter helps to remove more particles.

Some of the local people get their water from a stream. People also use the stream to wash clothes and their cars. The local people have built up immunities to certain substances in the water that might cause an American to be sick.

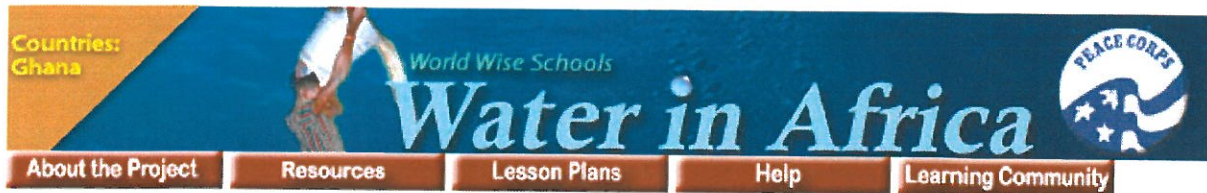
I store water in a 30-gallon container in my house. The children are more than happy to bring the water to my house. I must keep an eye on the small children so they do not contaminate my large container of water. One day a small girl was going to reach into my water container with soap on her hands.

by **Michael Nelson**, Gbani, Northern Region, Ghana

About once every two weeks I tell my friend Tony that my water is finished. Tony is a British guy who has lived in the neighboring village for 26 years, working as a linguist and raising two kids with his wife (who was born in New Jersey). He has a donkey cart that I borrow for transporting the water.

My water comes from the open well in his village. My friend in Gbani, Musah, usually does most of the work. (People in the village would almost rather I didn't lift a finger, such is their hospitality.) Musah draws the water from the depths of the well, depositing it into the two large barrels that the Peace Corps provides me. This is the water I use for everything, including drinking, cooking, bathing, and washing dishes. The well isn't very clean, because it is open to the air, but it isn't too bad. I have special filters for drinking water that the Peace Corps gives me.

In all these respects, I am lucky. Basically, all the others in my village gets their water from a nearby stream. During the dry season that stream is no longer there and they dig holes in its bed to get water from there. They can spend up to 24 hours a day trying to get the water they need. A well should be finished (with a sealed pump to keep the water clean) very soon. This well will hopefully provide water throughout the dry season as well as the wet season.



Daily Usage



by **Sasha Bennett**, Bongo-Soe, Ghana

I am probably one of the only WATSAN (Water/Sanitation/Health Education) Peace Corps Volunteers in Ghana with running water. I have a huge water tank, which is on top of a concrete mini-water tower and is connected to my faucet and showerhead by plastic pipes. I use water for just about everything: washing clothes, cooking, bathing, and feeding my animals (goat, dog, and baby monkey). I even use a bucketful of water to flush my toilet.

The women and children in our community fetch water throughout the day. They carry the large metal pans of water on their heads.

Until I came here, I did not realize the many uses of water. In the United States we take water for granted. We don't realize that there are still countries in the world where people suffer from the lack of water or of clean water.

by **Molly Campbell**, Amisano, Ghana

Fortunately, here in Amisano, we have many sources of water. During the dry season, however, it's sometimes hard to come by. Even though I have piped water, I always boil and filter it before using it. The pipes in Ghana are always breaking and the water isn't always clean. I also use the piped water for washing clothes and for bathing.

In my house I have a flush toilet, and I have a sink for washing dishes. The biggest difference from the United States and the biggest challenge is doing my laundry by hand. I don't use nearly as much water as I did in the U.S. I've come to realize how precious water really is.

by **Nell Todd**, Mafi-Dove, Ghana

Instead of taking a shower, I take a bucket bath. Instead of turning on the faucet, I turn my water filter tap for drinking water. Instead of putting my clothes in the washer, I put them in a plastic bucket and scrub by hand (oh, my knuckles!). Instead of putting my dishes in the dishwasher, I put them in another bucket to wash. Instead of having an electric pump that pumps water from our well to the sink, I pump water by hand, carry it to a large blue container, and fetch it when I need it. Instead of having options for what I can drink when I'm thirsty, I always drink water. Water doesn't go down a drain here; when wastewater fills up in a bucket, I throw it into the bushes.

by **Amy Wiedemann**, Gbefi, Volta Region, Ghana

My use of water here in Ghana differs tremendously from the way I used and thought about water in the United States. With no running water, every drop counts for me because every drop includes the labor of fetching or collecting, hauling, and storing. I use water for the same things as I did at home, but I use a lot less. Instead of a long hot shower, I use less than one full bucket for bathing. Instead of rinsing food under a faucet, I rinse it in water in a small basin, in which I'll also wash my hands, and add soap and wash my dishes. I store water in a large drum, but I store my drinking water in a separate container to minimize contamination. In addition to using water for bathing and cooking, I use it for washing my clothes and sometimes in cleaning.

The households around me use water in much the same way, but also in a way that relates to their crops. After they've peeled their cassava, they must scrub it well before sending it to the mill. In order to make porridge, they soak the maize overnight before milling it and then boiling it. In times of low rainfall, they haul water from the river to their fields to prevent crops from dying.

by **Steve Tester**, Odumase-Krobo, Ghana

I get up around 5:30 a.m. and take my daily bucket bath. I use a whole three-gallon bucket because I am 6' 2". I put the water in the kettle for coffee and then after it's down the hatch I'm off to school. By the time my students arrive they have had their early morning bath and are ready to learn.

Our science resource center is up and running and hopefully the reserve tank on top of it is full of water for any labs that may occur.

Our kitchen staff is busy with huge cauldrons filled with food. The two enormous one-thousand-gallon reservoir tanks are essential to feed the 490 girls on campus.

After school closes, lines of students form at the student reservoir tanks so they can fill their buckets for the evening bucket bath, and then later on, for the morning bucket bath.

I come home to another bucket bath to wash the grime I have accumulated from the dust in the air and the sweat that has poured from my body. Then I'm back asleep around 8:30 or 9 p.m. I read that people in the United States average a hundred gallons of water a day! I average around seven.

by **Chris Botzman**, Akome, Volta Region, Ghana

I have water stored in a 30-gallon container in my house. I dip water out of the large container to fill all of my needs for water. I have a three-quart filter on my table for drinking water. I need to keep this filled at all times. I have no running water so I cannot just go to a faucet and turn it on.

When I was in the United States I tried to conserve water by taking short showers. In Ghana, I take my bath from one bucket of water (one and a half gallons). Using less water saves it for other people and it also means having to carry less water to my house.

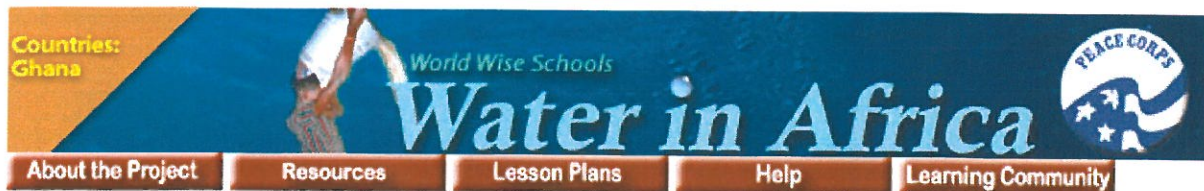
I work at a senior secondary school, which is equal to grades 10 to 12 in the United States. The students fill a bucket in the staff room each day, so the teachers can wash the chalk from their hands. There is a second bucket in which people dip their cups to get a drink of water.

by **Michael Nelson**, Gbani, Northern Region, Ghana

My use of water in Gbani basically mirrors the community's. I began adopting their habits while living in the chief's compound during my first three months here. In the morning we all take baths. A bath for us, though, consists of filling a bucket with about three or four gallons of water. We scoop that water out with a cup to get our bodies wet. Then we lather up with soap. Finally, we finish with the rinse cycle.

Drinking and cooking can also use a lot of water. In the hot season, I can easily drink more than three liters a day by myself. And then there is also washing dishes. Interestingly enough, in a water-poor area like this, it is the practice to take two baths a day, the second being in the evening.

Basically we use water like everyone else in the United States. The primary differences are that the quality of the water is poor and the quantity of water is smaller.



Managing Water

by **Sasha Bennett**, Bongo-Soe, Ghana

The official manager of the borehole is called the "Pump Management Team." The team consists of seven to nine members, three or four of whom are women. They are in charge of making sure the surrounding area is clean, and two members are trained to fix boreholes should anything dire happen.

In my opinion, it is the women who manage the borehole. It is the women who come out every day to pull out weeds between the rocks and around the concrete slab. It is the women and children who fetch water to bring to their homes. Men do not take part in fetching water and say it is "women's or girl's work."

by **Molly Campbell**, Amisano, Ghana

In Amisano, the women and children usually get water at the seminary borehole (about a quarter of a mile from the center of the village), at one of the three wells, at the river, or through the pipes. Villagers, however, have to pay for piped water (40 cedis, or about three cents a bucket), so not many use this. Farmers do not irrigate; they depend on the rainy season year after year. If a drought occurs, the crops die and there is no food to eat or sell. In the Peace Corps Project Nursery we hand-water during the dry season—each tree (there are thousands of them) getting a small "drink," one cup of water at a time.

by **Nell Todd**, Mafi-Dove, Ghana

Mafi-Dove has a water and sanitation committee, which is in charge of all water facilities. They also work on health education and improving sanitation in the town. As a water and sanitation Peace Corps Volunteer, I work directly with this committee. A member of the committee is a trained caretaker of the pumps. The committee has also set up a pump-maintenance fund for all upkeep and repairs.

Women usually weed around the boreholes. Women are also in charge of the water in their homes.

Farmers in Mafi-Dove depend on the rain unless they are nursing red pepper near their homes. There are no irrigation systems and farmland is often far from people's homes.

by **Amy Wiedemann**, Gbafi, Volta Region, Ghana

Women and children bear the burden of keeping their households supplied with water, through numerous daily trips to and from the borehole or river. Rainfall is so plentiful in my area that there really isn't an issue of community management, as there is in communities that face drought. Farmers, in times of plentiful rain, deal with the threat of rot, the need for suitable drainage, etc. During times of little rain, they face the enormous task of hauling bucket after bucket of water to save their parched crops. Regrettably, there are no irrigation systems.

by **Steve Tester**, Odumase-Krobo, Ghana

Water management is truly the responsibility of the woman in almost all Ghanaian households. If the water barrels are low then it is a woman who tells the children to haul water (by bucket) from whatever the source back to the house. Children are truly the labor force for "menial" tasks in Ghana.

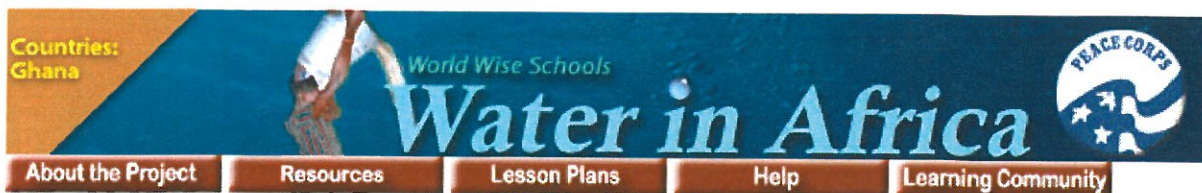
by **Chris Botzman**, Akome, Volta Region, Ghana

Adam Akude and Sama Aklaw are responsible for checking the streams for being clean. If the weeds are getting too big, they get someone to cut them. The children are responsible for getting water from the borehole and filling the water barrels at the house.

by **Michael Nelson**, Gbani, Northern Region, Ghana

Traditionally, it is the women of Gbani who have been in charge of managing the water supply. Occasionally, they call in men to assist in cleaning debris from the stream or digging from the stream or digging new water holes along the streamside.

As a Water and Sanitation Peace Corps Volunteer, I have helped alter and expand on that. In Gbani, we have created the Gbani Water and Sanitation Committee, a group of five women and four men charged with leadership, accounting, and proposal writing. And I think it has been successful. Our first well is almost finished and two more are on the way, all on the community's initiative. Additionally, the committee has initiated a community farm (of soybeans and groundnuts) to raise money for future projects.



Conservation



by **Sasha Bennett**, Bongo-Soe, Ghana

People usually conserve water in many different ways. Women do laundry once a week with only a small bucket of water. Any excess water left over from washing or bathing is often given to the animals or is recycled to water dry-season crops. People also conserve water by collecting rainwater for drinking and doing other chores during the rainy season.

by **Molly Campbell**, Amisano, Ghana

Amisano does not really have a conservation program for water.

by **Nell Todd**, Mafi-Dove, Ghana

I haven't seen a lot of water conservation in the community, though I think they naturally have systems for cooking, bathing, and washing that do not require a lot of water. Everyone (including me) bathes with just one bucket of water. Clothes-washing is systematic and efficient. Sometimes people will use "old" water to water plants, and we have planted trees and flowers around the bore holes to help soak up the excess water (thus helping drainage). In general, the people use what they need and no more. Remember, all water they need they have to fetch and carry on their heads back home.

by **Amy Wiedemann**, Gbefi, Volta Region, Ghana

Conservation and recycling of water both occur in day-to-day activities here, seemingly as second nature to the users. My community is fortunate in that they don't face shortage and availability issues. Nevertheless, it takes labor and consumes time to replenish the household water supply; hence, they certainly don't waste what is in the house.

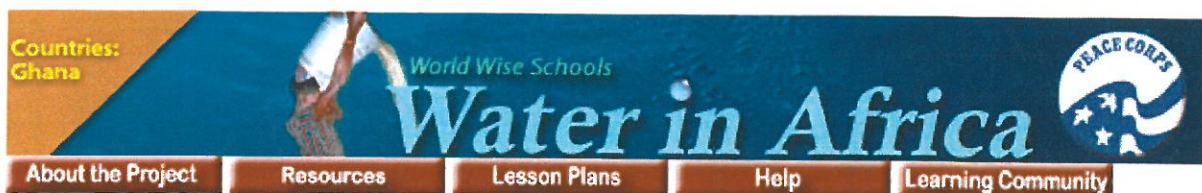
by **Steve Tester**, Odumase-Krobo, Ghana

Water is conserved in some ways in Odumase-Krobo. When families get drinking and cooking water, they pay 50 cedis a bucket for water from KPONG. When families get washing and bathing water, they get it free from a well. Babies are bathed, and then their bath water will be used to wash an adult. Other than that, water is not recycled (at least not that I am aware of). If you pay for something and you're on a limited income, obviously, you will conserve it for the most effective use.

by **Michael Nelson**, Gbani, Northern Region, Ghana

Even in the dry season, when water is getting scarce, you will rarely notice people conserving water. If they do conserve it at all, it is primarily by allowing the children to get by with fewer baths and by not washing clothes as frequently. Both of these solutions help explain the high prevalence of skin problems (rashes, acne, etc.) during that time of the year.

Water is also rarely recycled. The one exception I have noticed is that some people plant tomatoes and other plants near the outlets of their bath houses, hoping that water from that source will help the plants.



The Environment and Agriculture

by **Sasha Bennett**, Bongo-Soe, Ghana

Technological advancements in the construction and installation of boreholes and hand-dug wells have improved people's lives. They are now able to take advantage of clean drinking water. Boreholes have a life span of 50 or more years. In fact, we are now trying to replace a 53-year-old borehole. As far as agriculture is concerned, farmers plant crops according to seasons. Not many farmers practice dry-season farming. People do not like to draw water from the borehole for watering crops or even flowers, as they consider it a waste of good drinking water.

There are dams which were once used for irrigation purposes, but because the dams are so old (some over 50 years) the dammed water dries up during the hot season. But during the rainy season, the dams fill up and farmers use the water from irrigation canals to water their crops. Rice is usually grown around dams.

by **Molly Campbell**, Amisano, Ghana

I believe Amisano has benefited from technology over the past few years. For example, having piped water available helps against health problems. As time goes on, more and more people in the community will have the means to obtain piped water. Having good quality water at the village's disposal—whether it is from the piped water, well, or borehole—will have long-range benefits for the people in this community.

by **Nell Todd**, Mafi-Dove, Ghana

The Akosombo Dam was built upriver of Mafi-Dove in the late 1950s. The building of this dam created the largest manmade lake in the world, Lake Volta. However, it caused the Volta River downstream to decrease both in volume and in the rate at which it flows. Over the years the ecology has changed a great deal, and what was once a rich, fertile area with an abundance of fish has turned into a weedy, marshy, coastal savanna.

Fishing has declined, though it is still a primary activity. The increase in weeds has brought bilharzia—a blood disease in which a parasite enters one's body through direct contact with infected water (by stepping in it, not drinking it).

There have been no industrial developments in the area that have caused harm to groundwater. However, a new rice farm has just been started nearby that will use chemical fertilizers. Runoff will go directly into the river.

by **Amy Wiedemann**, Gbafi, Volta Region, Ghana

The advent of boreholes, sealed hand-dug wells, and other such technology has definitely improved the accessibility of clean drinking water. Of course, not everyone takes advantage of the borehole, but the option is there. This option is becoming all the more attractive to many as continued environmental degradation is slowly contaminating the principal water source in my community, the River Dayi. Deforestation and slash-and-burn agricultural practices are increasing the rate of soil erosion and the amount of runoff that lead to the River Dayi. Likewise, all of the various pesticides and growth drugs are mixing in that runoff. In Ghana, there is not the infrastructure of an efficient and effective FDA and EPA that we find in the United States. Thus many powerful and hazardous chemicals that are banned in the United States are still in use here. So, on the one hand, new technology is proving beneficial to the quality of water; on the other hand, the new technology introduces new problems.

by **Steve Tester**, Odumase-Krobo, Ghana

For a long time, Krobo Girls School has had its water supply from the KPONG Water Treatment Facility. In fact, the pump that was purchased 70 years ago came when the school first opened. Recently the pump began to give signs that it was ready to give up the ghost. Once, in 1998, the pump stopped working. While the plumber was trying to repair it, Krobo Girls Secondary School waited. After waiting for more than two weeks and giving up bathing for the last three days, the students rebelled. They marched to the headmistress' house and demanded water to bathe. As soon as five barrels of water were hauled by truck to the school, the water came on.

My secondary project is underway. I have been approved for 5.6 million cedis (2,700 cedis equals a U.S. dollar) to purchase a new water pump. The PTA is building a bigger reservoir for the pump. Now, let's hope the electricity holds out.

Planting of crops is synchronized with the advent of the major and minor rainy seasons.

by **Chris Botzman**, Akome, Volta Region, Ghana

Water quality has improved in recent years. The streams are regularly inspected. The boreholes provide clean water.

by **Michael Nelson**, Gbani, Northern Region, Ghana

In Gbani, there haven't been many new changes that seem to have affected the quality of water. Perhaps an exception could be the larger scale deforestation that is going on in West Africa. It is still uncertain how people can alter their environments through such actions, but it is true that the forests are shrinking in many areas.



Health and Nutrition

by **Sasha Bennett**, Bongo-Soe, Ghana

The water quality has obviously been improved by the installation of boreholes. But even though borehole water is taken from deep in the ground, other factors do lead to eventual contamination. If the boreholes are situated far away from houses, the water is fresher than in boreholes situated in the midst of houses. This is because groundwater is contaminated by waste disposal: cooking, rubbish, and just plain filth. Free-range defecation, which is human waste, around or near the borehole area, can seep into the groundwater and cause contamination. There have also been cases in many district capitals of tiny worms present in borehole water. This is due to dirt in or around the borehole.

Once people fetch water, they store it in covered clay pots to preserve the freshness and to prevent dirt and insects from contaminating the water. The clay pots are big; some are two-and-a-half feet high and store a lot of water. Sometimes water in a clay pot is as cold as refrigerator water! I do not store water in a clay pot. I have one, but I have never been able to use it effectively—whenever I put water in it, it leaks out and attracts lots of mosquitoes and flies.

by **Molly Campbell**, Amisano, Ghana

Except for the river water, most water in Amisano is fairly fresh. Most people in the village use piped, well, or borehole water for drinking and cooking. The river water is used mainly for bathing and washing clothes. By using the available freshwater, many sicknesses can be eliminated or at least reduced. I remember when our nursery well was completed and water could be drawn. I asked someone if it was good water, and he said with a smile "It is very, very sweet." It struck me as being funny, because I never thought of water as being sweet.

by **Nell Todd**, Mafi-Dove, Ghana

The boreholes in the town provide safe drinking water. However, many people (especially older people) don't like the taste of the borehole water. They grew up drinking river water because "it's sweet for them," and because it's what their forefathers drank. It takes time to develop new habits and the boreholes have been in the village for only two years. However, those that still drink river water sometimes boil it—this kills all living germs in it. Drinking water is stored in clay pots inside people's rooms. They keep it covered and the clay keeps the water cool.

The most common cause of contamination of the river water is human waste. Because there is a lack of latrines in the village, many people defecate by the river. Rain carries feces into the water and diseases are spread that way.

Bilharzia is one of the most common diseases found in this part of Ghana. Worms breed in snails that live in the weeds, and then the worms enter a person's body through the skin. A person who urinates in the water will pass eggs back into the river, completing a cycle. One of the primary symptoms of bilharzia is urinating blood.

by **Amy Wiedemann**, Gbefe, Volta Region, Ghana

There are two boreholes in my community that provide clean water, ready for consumption. The promise of clean water leading to good health is still not a strong enough argument to persuade everyone in the community to use the boreholes. All previous generations drank from the river. Some of those ancestors lived to be a hundred years old, while others died young from causes that had nothing to do with water. It's a tough argument. However, now the residents of Gbefe have a choice as to where they will fetch their water. As community and government health initiatives increase, the choice will become easier: either drink clean, clear borehole water from a hundred meters below the surface, or drink water from the River Dayi that contains runoff from the farm, soap suds from the laundry, and plenty of dirt.

The biggest obstacle to increasing clean water accessibility is the cost. Modern, state-of-the-art hydro-technology greatly exceeds the budget of subsistence farmers. However, I think accessibility is the key. If fetching water from a borehole is easier and more convenient than fetching it from the river, everyone will do it without a second thought. Compare it to recycling in the United States. Recycling is beneficial to the environment; no one can argue that. However, 15 years ago, it was a chore to recycle. You had to store all the materials in your house until you had time to deliver them to recycling centers. Aluminum went one place, glass to another, paper to a third, etc., so the process would take up at least half your day. But then came curbside pickup, just like the garbage and color-coded recycling bins outside grocery stores. Suddenly, someone who never considered recycling 15 years before is now doing it faithfully. It became easy and convenient to recycle. I believe the same would be true for people using clean drinking water in Ghana.

by **Steve Tester**, Odumase-Krobo, Ghana

I am a very lucky Peace Corps Volunteer. I live near the KPONG Water Treatment Facility, so all my water comes from there. This is due to the fact that I live near the school. Even though my water's fluoride levels fluctuate, I have never fallen ill due to contaminated water at my site.

Peace Corps Volunteer Vikki Sturdivant was not as lucky as I was with respect to water. Her water source was initially Lake Volta. The water was contaminated and unpalatable, if not polluted. She has had tests on the water and found it contained Shigella, bacteria (of all sorts), and schistosomiasis parasites.

Obviously the impact on Ghanaians' health is severe. If a worker in the family becomes ill, then it affects the entire family. In some areas, water is treated or filtered, but hopefully in the near future they will have boreholes to provide water.

I definitely prefer my insipid water to rancid disease-carrying water.

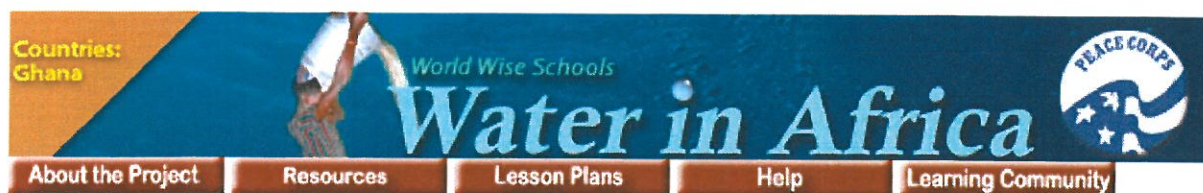
by **Chris Botzman**, Akome, Volta Region, Ghana

The borehole water is clean. Some people will still walk past a borehole and go to the stream, even for drinking water. I have not heard a reason for going to the stream other than it is what they have always done.

People cover their water barrels when they will not be using them. Some of the water barrels are old metal drums. Thus, there are particles from the barrel that get into the water.

by **Michael Nelson**, Gbani, Northern Region, Ghana

People here have few traditional means to ensure they have clean water. The primary ways are keeping the stream clean and making sure that animals and people do not defecate around there. None of these are foolproof solutions, however, as one can never be certain what is happening upstream. Luckily, though, we are free of Guinea worm and schistosomiasis—health problems that have ravaged other Ghanaian communities.



Recreation

by **Sasha Bennett**, Bongo-Soe, Ghana

Children enjoy playing in water to cool off. Girls, however, do not play in ponds or dams; it is mostly little boys or men. Swimming in pond water and dam water does bring consequences. Because of children and men urinating or defecating in the water, there has been a high rate of bilharzia, also called schistosomiasis. This disease is by parasites called blood flukes that are transmitted to other people by the contaminated person defecating or urinating in a body of water. The common symptoms of this disease are abdominal pain and the urination or defecation of blood. In almost every available body of water, there are children playing, but there are some high prices to pay.

by **Molly Campbell**, Amisano, Ghana

There are other uses for water in my village. For example, a few individuals raise fish and they fill their fish ponds with water from the river because their ponds do not have a natural source. Also the local beekeeper uses water in his raising of bees. If the beekeeper keeps water close by, the bees stay closer to their hives.

by **Nell Todd**, Mafi-Dove, Ghana

Children swim and fish (a form of fun and food). I don't know any specific water games that children play.

by **Amy Wiedemann**, Gbafi, Volta Region, Ghana

Actually, most children in my community do not know how to swim, and thus, rightfully so, are quite timid when the river level rises. Hence, water sports and games are nonexistent.

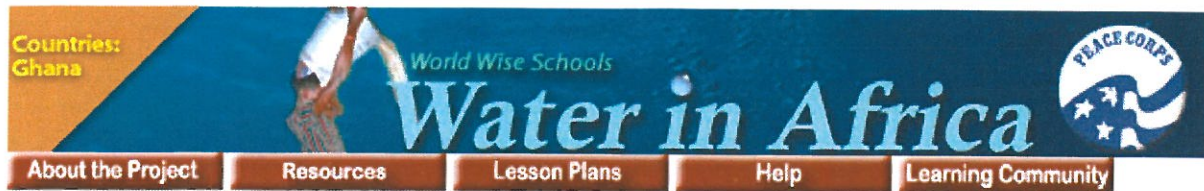
by **Steve Tester**, Odumase Krobo, Ghana

Swimming and bathing go hand in hand. Children go to bathe in Lake Volta and are not only cleaning themselves but also having fun. There are few recreational activities concerning water, due to its value and scarceness.

by **Michael Nelson**, Gbani, Northern Region, Ghana

Most of the year there really is not enough water for the children to play any water games. This has probably prevented them from developing many water games. Like children everywhere, however, the kids know how to appreciate water. On a hot day during the rainy season, you will find them in the water, jumping puddles, flapping their arms in it, and splashing each other.

Most people here don't know how to swim, but all shallow water that comes with the rainy season is fair play. Indeed, I have seen them playing in the dwindling pools of our dam, right up to the point the dry season takes them away.



Transportation

by **Nell Todd**, Mafi-Dove, Ghana

I live near the Volta River and the sea. The Volta River is mostly used by fishermen. There are only two bridges that cross the river so there are a lot of wooden canoes at various points along the river to shuttle people back and forth. A launch goes the length of the river every other day, carrying goods and passengers.

Lake Volta is used as a means to transport materials and people to the northern part of Ghana. The dam is the source of electricity for much of the country.

About two hours from Mafi-Dove is the Tema Harbor, one of two main harbors in the country. This is where much of the importing and exporting takes place. Ships come from all over the world to pick up and drop off goods.

by **Amy Wiedemann**, Gbafi, Volta Region, Ghana

Travel is quite limited on the River Dayi. The vegetation is so dense on its banks that very few skilled oarsmen maneuver their canoes on it. Those who do are generally small-scale fishermen who sell the fish they catch as a secondary income to supplement their farm income. However, less than 10 kilometers away is Lake Volta, the largest manmade lake in Africa—and the world. There, steamers and ferries shuttle goods north to south. There are also fishing villages all along its banks, and some of those people will cross the width of the lake to attend markets where they trade their fish for yams, dry goods, etc. All of this transport on the lake is quite dangerous, though, because there are no enforced regulations on passenger numbers or cargo size. Nor is there a reliable weather service to warn of storms.

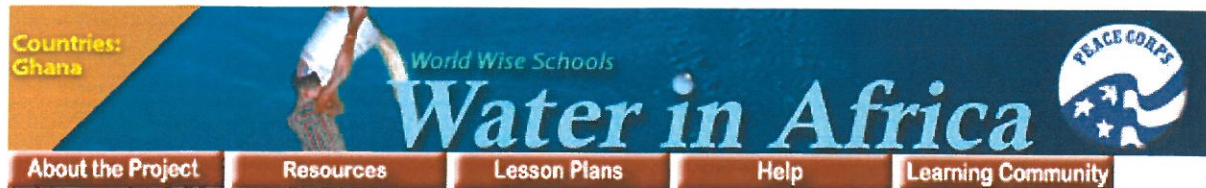
by **Steve Tester**, Odumase-Krobo, Ghana

Many villages along Lake Volta and the Volta River are accessible only by boat. Farmers from these villages come to market by boat to sell their produce. These long boats (from 6' to 20' in length) carry passengers, livestock, and produce to and from remote riverside and lakeside villages.

by **Michael Nelson**, Gbani, Northern Region, Ghana

During the rainy season there is a dam that holds back water, forming a small lake and a stream. But neither of these is navigable for travel.

Rain around my village often creates streams and water holes where none had existed before. Because of this, travel by roads and paths can be difficult. The dirt roads are swept away by erosion or become impassable streams. People complain that they can no longer reach their farms without a canoe or that their farms are flooded.



Other Stories

by **Sasha Bennett**, Bongo-Soe, Ghana

Once, about three months ago, a man came to my compound, yelling "Asapoka, Asapoka, I have something for you." I did not know or recognize the man, but he knew my Fra Fra tribal name. My name, Asapoka, was given to me by the village. It means "A woman from Soe to bring good things." My given name is rather hard for people to pronounce, so most everyone calls me Asapoka.

After the traditional greetings, he pulled out something from his pocket. In his palm, he had what seemed to be a tiny ball of fur. But then it started to move. Imagine my surprise when I saw a little face peeking out from under the fur! The man had a baby porcupine and wanted to give it to me. He got it from the bush, which basically means any area that is uninhabited by people. He also told me that a porcupine's quills are boiled, and then pounded into a fine powdery substance to make a traditional medicine. It is given to children to treat stomach ailments. The porcupine sure was cute, but I could not keep it, as it would just escape. I know that people eat porcupines, so I was touched by his gesture of giving me food. I thanked him profusely, and informed him that I could not keep it because I don't eat porcupines. He was very surprised when I told him that most Americans don't eat such things. So the man collected it and put it back in his pocket.

The man was trying to give me a "welcome" gift. He had had nothing for me when I came, and waited until he found something I could use. This story should be remembered not for the fact that people here eat porcupines, but rather for the fact that he wanted to give me food. His gesture shows how hospitable and generous Ghanaians are.

by **Molly Campbell**, Amisano, Ghana

During the last dry season, the piped water had been turned off for five days. My water barrel was really low so I figured I should get water soon. While sitting outside, my friend Paco was going by with a bucket. He said he was headed to the borehole. I said I also needed water and I'd go with him. I grabbed two buckets and headed out. I also grabbed a head wrap, thinking I'd try carrying it on my head, and I'd be a true Ghanaian. Well, Stephan didn't think I could, so he got two young boys to come help. I was determined to carry it on my head; of course after hearing "You can't," I was more determined than ever.

by **Nell Todd**, Mafi-Dove, Ghana

An essay written by a middle school student:

In Mafi-Dove, water plays many roles during ceremonies. We use water to pour libations and also during naming ceremony of newborn babies. When it is time to name the baby, we throw water on top of the building which then falls on the ground. This is done by our grandfathers and grandmothers. When they throw the water it means peace.

In Mafi-Dove, we get water from many places. We get our [water] from boreholes. We also get our water from wells and from our river, called Mlangoe. These are some of the places that we get our water.

In our farms, we use water to water our crops. Watering is one of the cultural practices that we do after transplanting our seedling from the nursery bed to field. We depend on rainwater until the time we harvest the crops.

We use water [in] small, small [amounts] in a hard day's work. Sometimes, when we are tired, it is difficult to go and fetch the water, so the small water that we have in the house, we manage it to do the work we wish do with it. We use it for bathing and cooking.

In Mafi-Dove, to get safe water, you should boil it or you fetch from the boreholes or the wells, which we built with Sister Ana (Peace Corps Volunteer Nell Todd).

In Mafi-Dove, we like to swim in the river. But sometimes we can get bilharzia by swimming in the water.

In Mafi-Dove, when we want to travel to our district capital, which is across the river Volta, we use our local boat called a canoe (*tormevu*). The canoe is made of wood. We use a paddle or oar to drive the canoe.

In Mafi-Dove, when we want to prepare our local food called *banku* or *akple* or soup (*detsi*) we use water to prepare it. We also use water to wash our clothes.

In Mafi-Dove, we use water to build our houses. One of our local buildings is built from mud. To build a mud house you will mix the dirt with water. After that you can either mould it into bricks or into balls. The bricks one has to dry before you use them. But the balls do not dry before you use them.

In conclusion, these are some of the ways that we use water.

by **Chris Botzman**, Akome, Volta Region, Ghana

I am now teaching math for students in their first year at junior school. These students will need to pass a national exam prior to being granted admission to the senior school. My hope is to help them prepare for passing the exam and also to get them prepared for the math in the senior secondary school.

I have also been allowed to use the school for one hour a night, four days a week. I am teaching math to whoever is interested in attending. At my last class there were over 50 students. Some of the students shared a chair. Sharing chairs is a common practice in Ghana.

Math in Ghana is called Maths or Mathematics. The children in Ghana want to attend school but there is a shortage of teachers. That is why I have been assigned to teach for the Peace Corps in Ghana.

by **Michael Nelson**, Gbani, Northern Region, Ghana

Gbani is a village of a thousand people in the Northern Region of Ghana. It lies along a dirt road that stretches from Walewale (the district capital) to the west and Togo to the east. This is Mamprugu, land of the Mamprusi people, a proud people whose traditional capital is at Nalerigu. The most advanced machine in the village is a gas-powered grinding mill used primarily to grind millet and corn.

I spent my first month at the chief's compound without ever seeing him. This is because he does not live in the village. Instead, people told me he was a "big man" in Accra. I was a bit skeptical of how "big" this big man could be.

After that first month I went down to Accra to celebrate Christmas. While there, I decided to contact my chief. It seemed the proper thing to do. I will never forget, though, that first phone conversation. First, his English was incredibly clear. Second, he almost immediately asked me if I had tennis shoes and a tennis racket. I just kept thinking, who is this guy? Does he really play tennis?

He sent his car and driver to pick me up (another shock). And we played tennis! Later we went back to his house where his wife made us these microwave treats while we watched an NBA game on his satellite TV. Dinner was *tizzet* (the local staple, a stiff porridge made of millet or corn, or both) served in silver bowls with white wine. I was blown away.

It might seem strange that a chief of such a small village could have come into his position. But really, it isn't. His father was king of the Mamprusis and made sure his son got a good education. Chief Musah Badimsugru Adam even got his MBA from Harvard! Now he is head of the Electric Company of Ghana. No, we don't have electricity yet, but it will be coming soon.

by **Michael Nelson**, Gbani, Northern Region, Ghana

Amdia's Story

Hi! I am Amdia Salifu Adam. Actually, Amdia is my own name. Salifu is my father's name. And Adam is our family name. I am 10 years old. Also, I am in P5 [Primary Level 5; roughly equivalent to our fifth grade in the States].

At least two times every day it is my job to fetch water from the stream that runs by our village. My sisters and (sometimes) my younger brother also fetch the water. My mothers often join me. That's right, mothers. Of course, I have only one real mother. Her name is Salamatu. But my father has four other wives as well. This is common here. This means that I have only three real brothers and two real sisters, but my father has at least 25 other children. They are my half-brothers and half-sisters, but we just call each other brother and sister.

The stream is about a kilometer from our house. It is our only source of water for drinking, cooking, bathing, and washing clothes. Normally, we try to avoid taking water directly from the stream, because we know that it may be dirty. Instead, we dig holes along the edges of the stream to collect the water that comes from the ground there. But sometimes we can't do that because rain has flooded those holes. So we just have to take the stream water.

Fetching water can be difficult, I guess. But I don't really notice it much. This is how we have been getting our water since forever! Also, we get used to carrying the water on our heads from the time we are very young. It's actually quite easy! My friend, Mike, however, seems to have a hard time with it!

When we finally get back to the house, we put the water into larger containers. We use this water later for our baths.